

CENTER FOR DISEASE CONTROL

MNWR

MORBIDITY AND MORTALITY WEEKLY REPORT

Epidemiologic Notes and Reports

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Epidemiologic Notes and Reports

Giardiasis — Vail, Colorado

A multi-state outbreak of giardiasis in travelers to and residents of Vail, Colorado, occurred from March 14 to April 20, 1978. At least 38 confirmed cases have been reported, to date.

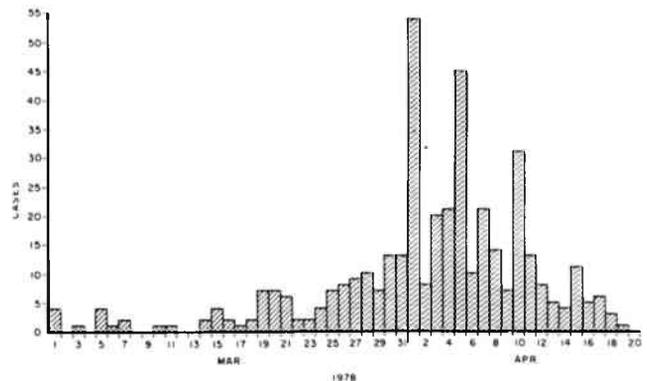
On April 13, a gastroenterologist in Petoskey, Michigan, reported the occurrence of giardiasis in 6 members of a family who had vacationed in Vail, Colorado, from March 23-25. All had epigastric pain, nausea, and weight loss. *Giardia lamblia* was confirmed in the stool specimen of 1 of the 6 patients. Additional information obtained from the Colorado State Health Department revealed that 13 cases of confirmed giardiasis had been reported from Colorado (7 from Colorado Springs, 6 from Denver), and 12 more confirmed cases from the state of New York—all in individuals who had visited Vail during the last week in March.

An epidemiologic investigation was begun by the Colorado Department of Health and CDC. Information was obtained on 777 long-term Vail residents by means of a questionnaire and stool survey. Of those surveyed, 465 (60%) gave a history of diarrheal illness within the past 3 months. A rise in the number of acute diarrheal illnesses began March 14-16 and reached a peak April 1-12 (Figure 1).

Preliminary analysis demonstrated no differences in attack rate by age or sex. Long-term (≥ 7 days) and short-term (< 7 days) diarrheal illness peaked at similar periods of time. The local hospital's routine examinations of stools for bacterial pathogens were negative. Stool and serum examinations by CDC for special bacterial and viral pathogens are pending.

Because contaminated water is a frequent cause of outbreaks of giardiasis, the Environmental Protection Agency (EPA) and CDC reviewed the city's recent records of weekly sewage output. During the week of March 28-April 3, the number of gallons of sewage produced had dropped approximately 50%. This coincided with a sewer-line obstruction and leak into the creek supplying water to the city that had been previously discovered on March 31 and corrected.

FIGURE 1. Cases of diarrheal illness in households, by date of onset, Vail, Colorado, March 1-April 20, 1978



Meter readings of gallons of sewage had returned to normal by the next week. Cases continued to occur, however, up to the day of the survey, but at a much reduced level. Water from the creek and the storage tanks was filtered for *Giardia* cysts and viral pathogens by the EPA. The results are pending.

Reported by T Gietzan, MD, Petoskey, Mich; NS Hayner, MD, State Epidemiologist, Michigan State Dept of Public Health; P Landis, MD, St. Joseph's Hospital, Denver; Eagle County Health Dept, Vail; TM Vernon, MD, State Epidemiologist, Colorado State Dept of Health; DO Lyman, MD, State Epidemiologist, New York State Dept of Health; Environmental Protection Agency; Parasitic Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: The fact that many cases occurred after discovery of the sewer-line obstruction is probably a reflection of the long incubation period of giardiasis (variable, but approximately 7 days) and the continued use of water from contaminated storage tanks. As dilution with fresh water occurred, illness disappeared.

Physicians examining patients who have recently traveled to Vail should be alert for symptoms compatible with giardiasis—diarrhea, abdominal cramps, gas, anorexia, and weight loss. Because the *Giardia* organism is intermittently excreted, 3 stool specimens obtained on different days may be needed to confirm the diagnosis.

*Recommendation of the Public Health Service
Advisory Committee on Immunization Practices*

Smallpox Vaccine

INTRODUCTION

Smallpox transmission has been greatly reduced throughout the world. For this reason, there is no justification for altering the existing recommendation *against* routinely vaccinating children or other persons in the U.S. civilian population. *Vaccination continues to be indicated only for the few laboratory workers who are likely to have contact with the variola virus and for travelers to countries which continue to require vaccination as a condition for entry.*

Travelers entering the United States do not have to present evidence of a valid International Certificate of Vaccination unless they are coming from a country which is reporting the presence of smallpox cases. This applies both to returning U.S. nationals and to visitors from other countries.

No country in Europe, the Caribbean, or the North American continent requires travelers coming directly from the United States to be vaccinated. Most countries that do require vaccination will waive the requirement for children

under 1 year of age and for persons with the medical conditions listed under "Precautions and Contraindications" (see p. 158) if they possess a medical statement from a physician indicating that vaccination is contraindicated for health reasons. This procedure has been widely accepted.

The number of vaccinations required for foreign travel is very small, but substantial numbers of vaccinations have been performed yearly in the United States. In 1977, an estimated 4.5 million vaccinations were performed in the non-military population. Giving smallpox vaccinations, except when required for travel, should be discontinued.

To further reduce smallpox risks, the World Health Organization (WHO) is making efforts to limit the number of laboratories, worldwide, which store or work with the smallpox virus. The number of such laboratories in the United States has been reduced to 3.

The Public Health Service, through CDC, maintains a stockpile of smallpox vaccine for emergencies. The Center also provides consultation and rapid laboratory diagnosis for suspect cases of smallpox.

Table I. Summary—Cases of Specified Notifiable Diseases: United States

[Cumulative totals include revised and delayed reports through previous weeks]

DISEASE	18th WEEK ENDING		MEDIAN 1973-1977††	CUMULATIVE, FIRST 18 WEEKS			
	May 6, 1978	May 7, 1977†		May 6, 1978	May 7, 1977†	MEDIAN 1973-1977††	
Aseptic meningitis	54	41	41	650	650	637	
Brucellosis	1	3	6	41	57	57	
Chickenpox	4,770	6,264	5,889	76,124	112,345	102,541	
Diphtheria	—	2	5	28	36	94	
Encephalitis	Primary	9	15	186	213	265	
	Post-Infectious	8	3	50	57	80	
	Type B	256	355	224	5,057	5,614	3,803
Hepatitis, Viral	Type A	578	548	9,699	11,292	12,509	
	Type unspecified	182	158	2,993	3,080		
Malaria	8	14	6	148	132	90	
Measles (rubeola)	901	2,789	1,251	12,023	30,743	15,576	
Meningococcal infections, total		60	51	27	998	618	
	Civilian	60	51	26	987	602	
	Military	—	—	—	11	4	16
Mumps	486	488	1,838	7,851	10,667	29,194	
Pertussis	19	25	—	670	261	—	
Rubella (German measles)	880	697	697	7,081	11,544	8,343	
Tetanus	2	—	2	19	15	15	
Tuberculosis	625	611	627	9,923	10,147	10,695	
Tularemia	2	3	3	25	33	33	
Typhoid fever	8	4	4	143	122	109	
Typhus, tick-borne (Rky. Mt. spotted fever)	11	22	12	36	67	39	
Venereal Diseases:							
Gonorrhea	Civilian	19,625	20,210	19,480	317,888	320,048	320,920
	Military	665	474	590	8,109	9,220	10,117
Syphilis, primary and secondary	Civilian	435	344	367	7,158	7,270	8,780
	Military	6	6	6	103	104	123
Rabies in animals	57	68	68	941	961	961	

Table II. Notifiable Diseases of Low Frequency: United States

	CUM.		CUM.
Anthrax:	2	Poliomyelitis, total:	—
Botulism: Texas 1	42	Paralytic:	—
Congenital rubella syndrome: N.C. 1	11	Psittacosis: * Calif. 1	41
Leprosy: Pa. 1, Calif. 1	38	Rabies in man:	—
Leptospirosis: *	16	Trichinosis: N.J. 1	9
Plague:	1	Typhus, murine:	12

*Delayed reports received for calendar year 1977 are used to update last year's weekly and cumulative totals.

††Medians for Gonorrhea and Syphilis are based on data for 1975-1977.

*Delayed reports: Leptospirosis: Va. —1, Psittacosis: D.C. 1(1977)

*Smallpox Vaccine — Continued***SMALLPOX VACCINE****Types of Smallpox Vaccine**

Smallpox vaccine* is available in 2 forms—glycerinated and lyophilized. Both, when properly preserved and administered, afford equal protection. The glycerinated form requires constant refrigeration at temperatures recommended by the manufacturer in all stages of transport and storage. Comparatively minor storage difficulties may reduce this form's potency enough to decrease efficacy, particularly for revaccination. (Even in excellent medical facilities, the glycerinated vaccine is often stored under improper conditions.) Use of lyophilized vaccine, which is much more stable, ensures more consistently effective vaccination. Due care must be exercised to provide proper handling and storage of the lyophilized vaccine after reconstitution, as directed by the manufacturer.

Effectiveness

The efficacy of smallpox vaccine has never been precisely measured in controlled trials. It is, however, generally agreed that successful vaccination confers a high level of protection for 3 years. Vaccination provides substantial but waning immunity for 10 years or more and appears to protect against fatal smallpox for an even longer time period.

VACCINE USAGE**General Recommendations**

Proper vaccination techniques and careful adherence to standard contraindications to vaccination should be observed when smallpox vaccination is necessary. The following technical information is intended for use at those times.

Vaccine Recipients

International travelers: All travelers going to areas requiring vaccination should be vaccinated before departing from the United States. For purposes of validating an International Certificate of Vaccination, *primary vaccinations must be inspected* and the traveler revaccinated if the initial vaccination is not successful. Although inspection of revaccination is not required by international regulations, health workers are strongly encouraged to examine the revaccination site and again revaccinate the traveler if a major reaction has not occurred.

High-risk groups: Only laboratory workers who are likely to be exposed to variola virus should be protected by primary smallpox vaccination and regular revaccination each year.

There is no longer sufficient risk of smallpox exposure in the United States to recommend regular vaccination or revaccination of hospital and health personnel (MMWR 25:9, 1976).

Vaccination Techniques

Sites of vaccination: The skin over the insertion of the

*Official name: Smallpox Vaccine

deltoid muscle or the posterior aspect of the arm over the triceps muscle are the preferred sites of vaccination.

Methods of vaccination: (1) *Multiple pressure*—Chemical agents should not be used for the preparation of the skin for vaccination. If necessary, the skin can be cleansed with water. Care should be taken that the skin is dry when the vaccination is made. The needle or vaccinostyle used to perform the vaccination should be sterile and, if heat-sterilized, be cool before being used. A small drop of vaccine should be placed on the dry, clean skin and a series of pressures made through the vaccine in an area about 1/8-inch in diameter. These pressures should be made with *the side* of the sharp, single-pointed, sterile needle held tangentially to the skin. For primary vaccination, 10 pressures are adequate; for revaccination, 30 pressures should be made. The remaining vaccine should be wiped off with dry, sterile gauze. Preferably, no dressing should be applied to the site. (2) *Multiple puncture*—The vaccination site should be prepared as described above. The multiple-puncture technique uses a pre-sterilized bifurcated needle which is inserted into the vaccine vial, causing a droplet of vaccine to adhere between the prongs of the needle. Its presence should be confirmed visually. Touching the needle points to the skin deposits the vaccine. Holding the bifurcated needle perpendicular to the skin, one should make punctures through the droplet of vaccine with strokes vigorous enough to allow a trace of blood to appear. For primary vaccination, 5 puncture strokes are adequate; for revaccination, 15 puncture strokes should be made. Any remaining vaccine should be wiped off with dry, sterile gauze, and no dressing should be applied. (3) *Jet injection*—The recommended dose of vaccine specifically manufactured for this purpose is injected intradermally with a jet-injection apparatus. Excess vaccine should be wiped off the arm with dry, sterile gauze. Preferably, no dressing should be applied to the site.

Interpretation of Responses

Time of inspection: The vaccination site should be inspected 6-8 days after vaccination. The response at this time should be interpreted.

Primary vaccination: A successful primary vaccination shows a typical Jennerian vesicle. If none is observed, vaccination procedures should be checked, and vaccination repeated with vaccine from other lots until a successful result is obtained.

Revaccination: Two types of revaccination response are defined by the WHO Expert Committee on Smallpox, eliminating use of older terms such as "accelerated" and "immune." They are: (1) *Major reaction*—a vesicular or pustular lesion or an area of definite palpable induration or congestion surrounding a central lesion, which may be a crust or an ulcer. This reaction indicates that virus multiplication has taken place and that the revaccination is successful. (2) *Equivocal reaction*—All reactions other than "major reactions." They may be the consequences of immunity adequate to suppress virus multiplication, or they may represent only allergic reactions to an inactive vaccine. If an equivocal reaction is observed, revaccination procedures should be checked and revaccination repeated with vaccine from another lot.

*Smallpox Vaccine — Continued***Misuse of Vaccine**

There is no evidence that smallpox vaccination has therapeutic value in the treatment of recurrent herpes simplex infection or of warts. Vaccinia necrosum on occasion has occurred when patients with recurrent herpes associated with an underlying immunologic disorder were vaccinated.

PRECAUTIONS AND CONTRAINDICATIONS**Complications and Risks**

Smallpox vaccination, as with other medical procedures, has a definite, measurable risk of serious complications, including death. Comprehensive national surveys to determine the frequency of smallpox vaccine complications in the United States were made in 1963 and 1968. In 1968, among approximately 5.6 million primary vaccinees and nearly 8.6 million revaccinees and their contacts, 16 cases of encephalitis, 11 cases of vaccinia necrosum, and 126 cases of eczema vaccinatum are known to have occurred. Nine persons died. These figures are believed to be the minimum estimates of vaccine-associated morbidity. A substantial number of less serious complications, some of which necessitated hospitalization, were also recorded. The majority of deaths and complications occurred in primary vaccinees.

Survey data clearly show that more than half of the complications from smallpox vaccination might not have occurred if known contraindications were heeded. Furthermore, complication rates appear to be at least twice as high for children under 1 year of age compared to slightly older children, and case-fatality rates are also higher for infants.

Contraindications

Skin disorders: The presence of eczema and other forms of chronic dermatitis in persons to be vaccinated or in their household contacts is a contraindication to vaccination. Inquiry into the history of skin disorders should always take place before vaccination. If there is a real need to vaccinate a person who could create a hazard for a household contact with dermatitis, consideration should be given to separating the vaccinee from his or her contact until the vaccination lesion has healed.

Pregnancy: In rare instances, vaccinia virus crosses the placental barrier and infects the fetus. Of the few reported cases of fetal vaccinia, virtually all have followed primary vaccination.

Altered immune states: The following are strong contraindications to vaccination: leukemia, lymphoma, and other reticuloendothelial malignancies; dysgammaglobulinemia; therapy with immunosuppressive drugs, such as steroids and antimetabolites; or radiation therapy.

SIMULTANEOUS ADMINISTRATION OF VACCINES

Although the administration of live-virus vaccines should preferably be separated by a period of 4 weeks, smallpox, measles, and/or yellow fever vaccines can be administered simultaneously, when required. (See also ACIP: General recommendations on immunization. MMWR 25:349-350, 355, 1976.)

SURVEILLANCE

A suspect case of smallpox is a public health emergency. Smallpox surveillance in the United States includes detecting suspect cases, making a definitive diagnosis with laboratory confirmation, and preventing smallpox transmission. Before other actions are taken, a suspect smallpox case should be reported immediately by telephone to state or local health officials for advice on isolation, diagnosis, and collection of laboratory specimens. Specifically, because of the difficulties encountered in Europe with nosocomial transmission of smallpox from imported cases, great care must be taken by health officials to prepare adequate isolation facilities. If the patient's condition does not require hospitalization, isolation outside a hospital should be encouraged. Clinical consultation, the collection of laboratory specimens, and a preliminary laboratory diagnosis can usually be completed in 8-24 hours.

RELATED INFORMATION**Thiosemicarbazones**

Certain thiosemicarbazone derivatives have been reported to have a short-term protective effect against smallpox and possibly a therapeutic effect for individuals with severe vaccinal complications. However, studies have failed to show a statistically significant modifying effect on clinical smallpox in terms of protection or prolonged survival. The thiosemicarbazones are still experimental drugs and are not available for general use.

Vaccinia Immune Globulin

Vaccinia Immune Globulin (VIG) is a 16.5% solution of a specific immune serum globulin from healthy adults recently immunized with vaccinia virus. It is no longer available in the United States.

VOLUNTEER CONSULTANTS ON SMALLPOX VACCINATION COMPLICATIONS

Patients with serious complications following smallpox vaccination may benefit from various modes of therapy. Assistance in managing such patients can be obtained from one of the listed consultants.

1. Physicians assigned to the Bureau of Smallpox Eradication of CDC, Atlanta Ga. 30333
Day: 404-633-3311
Night: 404-633-2176
2. Vincent Fulginiti, MD, Professor and Head, Dept. of Pediatrics, Arizona Health Sciences Center, University of Arizona, Tucson, Ariz. 85724
Office: 602-882-6053
Home: 602-299-9656

Alternate:

Otto F. Sieber, Jr., MD, Associate Professor, Pediatrics, University of Arizona, College of Medicine, 1501 N. Campbell Avenue, Tucson, Ariz. 85724

Office: 602-882-6507
Home: 602-299-6305

3. Paul F. Wehrle, MD, Director of Pediatrics, Pediatrics Pavilion, Room 2D4, Los Angeles County-USC Medical Center, 1129 North State Street, Los Angeles, Calif. 90033
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Home: 213-287-9858

(Continued on Page 163)

Table III
Cases of Specified Notifiable Diseases: United States
Weeks Ending May 6, 1978 and May 7, 1977 - 18th Week

AREA REPORTING	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	CHICKEN- POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
						Primary: Arthropod- borne and Unspecified		Post In- fectious	Type B	Type A	Type Unspecified		
						1978	CUM. 1978	1978	1977†	1978	1978		
UNITED STATES	54	1	4,770	-	28	9	15	8	256	578	182	8	148
NEW ENGLAND	2	-	444	-	-	-	1	-	9	15	19	-	7
Maine*	-	-	152	-	-	-	-	-	-	-	-	-	1
New Hampshire	-	-	4	-	-	-	-	-	2	1	-	-	1
Vermont	-	-	1	-	-	-	-	-	2	-	3	-	-
Massachusetts	-	-	168	-	-	-	-	-	2	4	16	-	1
Rhode Island	-	-	33	-	-	-	-	-	-	-	-	-	-
Connecticut	2	-	86	-	-	-	-	-	3	10	-	-	4
MIDDLE ATLANTIC	4	-	481	-	1	-	3	1	28	29	21	-	34
Upstate New York	3	-	299	-	-	-	2	1	8	12	9	-	4
New York City	-	-	103	-	1	-	1	-	11	5	6	-	16
New Jersey	-	-	NN	-	-	-	-	-	9	12	6	-	4
Pennsylvania*	1	-	79	-	-	-	-	-	NA	NA	NA	-	10
EAST NORTH CENTRAL ..	3	-	2,090	-	-	1	2	2	26	70	7	-	4
Ohio	1	-	220	-	-	1	-	1	8	14	-	-	-
Indiana	-	-	172	-	-	-	-	-	4	2	2	-	-
Illinois	2	-	851	-	-	-	-	-	6	34	2	-	2
Michigan	-	-	441	-	-	-	2	-	8	18	3	-	1
Wisconsin*	-	-	406	-	-	-	-	1	-	2	-	-	1
WEST NORTH CENTRAL ..	1	1	425	-	-	-	2	1	23	34	14	-	10
Minnesota	-	-	1	-	-	-	-	-	5	9	1	-	2
Iowa	-	-	278	-	-	-	-	-	-	4	1	-	-
Missouri*	1	1	6	-	-	-	2	-	8	12	10	-	4
North Dakota	-	-	12	-	-	-	-	-	1	3	-	-	-
South Dakota	-	-	10	-	-	-	-	-	-	-	-	-	-
Nebraska	-	-	30	-	-	-	-	-	2	5	2	-	3
Kansas	-	-	88	-	-	-	-	1	7	1	-	-	1
SOUTH ATLANTIC	13	-	328	-	-	1	1	4	43	90	14	4	31
Delaware	-	-	15	-	-	-	-	-	-	-	-	-	1
Maryland	2	-	26	-	-	-	-	-	1	12	-	-	9
District of Columbia* ..	-	-	1	-	-	-	-	-	1	-	-	-	-
Virginia*	5	-	31	-	-	-	-	-	8	4	3	2	6
West Virginia	NA	NA	NA	NA	-	NA	-	-	NA	NA	NA	NA	1
North Carolina	1	-	NN	-	-	1	1	1	4	7	2	-	1
South Carolina	-	-	29	-	-	-	-	-	-	2	-	-	1
Georgia	-	-	-	-	-	-	-	-	8	21	-	-	1
Florida*	5	-	226	-	-	-	-	3	21	44	9	2	11
EAST SOUTH CENTRAL ..	4	-	180	-	-	1	2	-	16	38	2	-	3
Kentucky	1	-	142	-	-	-	-	-	10	12	1	-	1
Tennessee	1	-	NN	-	-	-	1	-	1	15	-	-	1
Alabama	2	-	16	-	-	-	1	-	5	3	1	-	1
Mississippi	-	-	22	-	-	1	-	-	-	8	-	-	-
WEST SOUTH CENTRAL ..	2	-	315	-	1	2	-	-	26	70	36	-	8
Arkansas	-	-	129	-	1	-	-	-	-	1	5	-	-
Louisiana	1	-	NN	-	-	-	-	-	7	8	2	-	3
Oklahoma	-	-	-	-	-	-	-	-	4	4	4	-	-
Texas	1	-	186	-	-	2	-	-	15	57	25	-	5
MOUNTAIN	3	-	182	-	2	-	-	-	10	65	22	-	3
Montana	-	-	14	-	-	-	-	-	-	1	-	-	-
Idaho	-	-	4	-	-	-	-	-	-	9	2	-	-
Wyoming	-	-	-	-	-	-	-	-	1	-	-	-	-
Colorado	3	-	118	-	1	-	-	-	3	14	6	-	1
New Mexico	-	-	2	-	-	-	-	-	2	8	1	-	-
Arizona	-	-	NN	-	-	-	-	-	3	23	12	-	1
Utah	-	-	38	-	-	-	-	-	1	2	1	-	-
Nevada*	-	-	6	-	1	-	-	-	-	8	-	-	1
PACIFIC	22	-	325	-	24	4	4	-	75	167	47	4	48
Washington*	3	-	298	-	24	2	-	-	9	34	5	-	1
Oregon	3	-	1	-	-	-	-	-	9	18	3	1	3
California*	15	-	-	-	-	2	4	-	56	112	39	2	41
Alaska	-	-	-	-	-	-	-	-	1	2	-	1	1
Hawaii	1	-	26	-	-	-	-	-	-	1	-	-	2
Guam*	NA	NA	NA	NA	-	NA	-	-	NA	NA	NA	NA	-
Puerto Rico*	-	-	18	-	-	-	-	-	-	2	4	-	2
Virgin Islands	-	-	-	-	-	-	-	-	-	-	-	1	1

NN: Not notifiable

NA: Not available

†Delayed reports received for 1977 are not shown below but are used to update last year's weekly and cumulative totals.

The following delayed reports will be reflected in next week's cumulative totals. Asep. meng.: Wis. -1; Chickenpox: Mo. +110, Nev. -81, Calif. +44, Guam +16, P.R. +1; Enceph., post: Wis. +1;

Hep. B: Pa. +37, Mo. +1, Wash. -1; Hep. A: Maine -1, Pa. +34, Mo. +6, D.C. +1, Va. -1, Fla. -4, Guam +1; Hep. unsp.: Pa. +1, Va. +1; Malaria: Wash. +1

Table III-Continued
Cases of Specified Notifiable Diseases: United States
Weeks Ending May 6, 1978 and May 7, 1977 - 18th Week

REPORTING AREA	MEASLES (Rubella)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1978	CUMULATIVE		1978	CUMULATIVE		1978	CUM. 1978		1978	1978	
		1978	1977 †		1978	1977 †						
UNITED STATES	901	12,023	30,743	60	998	794	486	7,851	19	880	7,081	19
NEW ENGLAND	117	1,390	1,445	1	49	37	31	497	-	41	320	-
Maine	81	923	4	-	4	3	24	366	-	10	127	-
New Hampshire	-	10	441	-	6	3	-	7	-	7	76	-
Vermont	6	22	251	-	2	3	-	4	-	11	14	-
Massachusetts	7	148	364	-	13	10	4	46	-	4	59	-
Rhode Island	-	4	6	-	11	-	2	14	-	-	1	-
Connecticut	23	283	379	1	13	18	1	60	-	9	43	-
MIDDLE ATLANTIC	122	996	3,995	9	151	107	17	316	5	241	1,385	1
Upstate New York	94	680	1,298	3	52	27	8	108	3	41	196	-
New York City	13	113	188	2	35	23	5	86	1	5	33	-
New Jersey*	6	18	96	1	30	26	2	61	-	167	930	-
Pennsylvania	9	185	2,413	3	34	31	2	61	1	28	226	1
EAST NORTH CENTRAL	352	4,446	6,471	3	82	87	189	2,756	1	436	2,939	1
Ohio	11	235	334	-	21	29	24	331	1	8	462	-
Indiana	1	68	3,109	-	15	7	3	125	-	3	117	1
Illinois	20	408	788	2	6	22	100	946	-	14	247	-
Michigan	264	2,937	664	1	32	20	17	819	-	215	1,310	-
Wisconsin*	56	798	1,576	-	8	9	45	535	-	196	803	-
WEST NORTH CENTRAL	20	175	5,820	-	35	43	24	1,473	-	6	193	1
Minnesota*	-	16	1,134	-	5	18	-	12	-	2	16	-
Iowa	14	35	3,091	-	5	4	6	96	-	-	19	-
Missouri*	-	6	688	-	17	14	4	876	-	1	49	-
North Dakota*	6	81	8	-	1	1	-	5	-	-	18	-
South Dakota	-	-	37	-	2	4	-	5	-	-	25	-
Nebraska	-	1	85	-	-	-	3	13	-	-	4	-
Kansas	-	36	777	-	5	2	11	466	-	3	62	1
SOUTH ATLANTIC	205	2,879	2,030	16	273	177	26	395	1	39	614	3
Delaware	-	5	19	1	5	14	1	23	-	5	13	-
Maryland	-	3	279	2	13	12	1	45	-	-	2	1
District of Columbia	-	-	3	-	1	-	1	1	-	-	1	-
Virginia	134	1,943	1,067	2	36	12	4	77	-	4	186	-
West Virginia	NA	527	91	-	5	8	NA	78	NA	NA	163	-
North Carolina	1	51	30	-	51	46	3	40	-	13	155	-
South Carolina	5	154	115	-	17	14	-	11	-	-	7	-
Georgia	-	6	364	3	35	27	14	26	-	-	1	-
Florida*	65	190	62	8	110	44	2	94	1	17	86	2
EAST SOUTH CENTRAL	28	786	1,004	4	81	92	86	622	2	25	231	1
Kentucky	4	66	421	-	15	19	2	84	1	1	42	1
Tennessee	22	583	508	-	23	21	73	334	-	3	94	-
Alabama	-	25	59	1	22	33	9	180	-	-	12	-
Mississippi	2	112	16	3	21	19	2	24	1	21	83	-
WEST SOUTH CENTRAL	20	800	1,650	16	150	139	75	1,216	2	36	579	10
Arkansas	1	10	26	-	13	9	19	528	1	1	57	1
Louisiana	9	368	65	7	50	42	6	43	-	32	346	1
Oklahoma	1	10	46	1	14	5	-	4	-	-	9	1
Texas	9	412	1,513	8	73	83	50	641	1	3	167	7
MOUNTAIN	4	113	1,890	4	21	21	6	119	3	3	81	-
Montana	3	80	925	-	1	2	2	9	-	1	9	-
Idaho	-	1	63	1	2	2	-	18	-	-	3	-
Wyoming	-	-	2	-	-	1	-	-	-	-	-	-
Colorado	-	13	384	-	2	1	-	33	-	-	17	-
New Mexico*	-	-	225	2	4	6	-	7	-	-	3	-
Arizona*	-	7	216	1	7	7	-	3	3	1	29	-
Utah	-	4	5	-	4	1	3	46	-	-	17	-
Nevada	1	8	70	-	1	1	1	3	-	1	3	-
PACIFIC	33	438	6,438	7	156	91	32	457	5	53	739	2
Washington*	-	37	348	4	27	11	12	134	-	5	78	-
Oregon	6	125	130	-	4	8	2	43	-	4	58	-
California	27	270	5,894	3	119	53	15	258	5	43	600	2
Alaska	-	1	55	-	5	18	-	4	-	-	1	-
Hawaii	-	5	11	-	1	1	3	18	-	1	2	-
Guam	NA	1	3	-	-	-	NA	1	NA	NA	-	-
Puerto Rico*	7	89	424	-	1	-	53	604	-	1	11	1
Virgin Islands	-	6	9	-	-	-	-	1	-	-	1	-

NA: Not available

†Delayed reports received for 1977 are not shown below but are used to update last year's weekly and cumulative totals.

*The following delayed reports will be reflected in next week's cumulative totals. Measles: N.H. +1, Mass. -1, Wis. -1, N.Dak. +8, Ariz. +1; Men. inf.: Fla. -1, Wash. -1; Mumps: Mass. -1, Mo. +29, N.Dak. +1, P.R. +9; Pertussis: N.Mex. +1; Rubella: N.J. -2, Wis. +5, Minn. -1, Mo. +1, N.Dak. +8, Ariz. -1

Table III-Continued
Cases of Specified Notifiable Diseases: United States
Weeks Ending May 6, 1978 and May 7, 1977 - 18th Week

REPORTING AREA	TUBERCULOSIS		TULA- REMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (RMSF)		VENEREAL DISEASES (Civilian Cases Only)					RABIES IN ANIMALS	
	1978	CUM. 1978	CUM. 1978	1978	CUM. 1978	1978	CUM. 1978	GONORRHEA		SYPHILIS (Pri. & Sec.)		CUM. 1978		
								1978	CUMULATIVE		1978		CUMULATIVE	
							1978		1977 †	1978		1977 †		
UNITED STATES	625	9,923	25	8	143	11	36	19,625	317,888	320,048	435	7,158	7,270	941
NEW ENGLAND	21	332	-	1	33	-	-	557	8,112	8,348	9	220	275	42
Maine	-	19	-	-	-	-	-	50	634	643	-	4	8	39
New Hampshire*	-	8	-	-	5	-	-	25	374	328	-	1	1	-
Vermont	-	12	-	-	1	-	-	15	208	211	-	1	4	-
Massachusetts	15	200	-	1	18	-	-	207	3,539	3,669	5	146	207	1
Rhode Island	-	19	-	-	4	-	-	27	560	643	-	7	3	-
Connecticut	6	74	-	-	5	-	-	233	2,797	2,854	4	61	52	2
MIDDLE ATLANTIC	93	1,691	1	-	14	-	5	2,261	35,461	34,287	49	976	1,043	16
Upstate New York	23	253	1	-	3	-	3	271	5,636	5,092	3	64	95	16
New York City	17	662	-	-	8	-	-	774	13,874	14,904	39	691	652	-
New Jersey	40	437	-	-	1	-	-	682	6,751	5,459	3	110	134	-
Pennsylvania	13	339	-	-	2	-	2	534	9,200	8,832	4	111	162	-
EAST NORTH CENTRAL	92	1,471	-	-	6	-	-	4,008	45,724	48,286	125	770	787	33
Ohio	16	274	-	-	1	-	-	1,348	12,269	12,563	18	160	207	3
Indiana	7	179	-	-	-	-	-	288	4,798	4,408	6	45	56	4
Illinois*	37	533	-	-	1	-	-	1,362	13,803	15,946	92	478	408	3
Michigan	24	417	-	-	4	-	-	613	10,625	10,769	6	64	81	1
Wisconsin	8	68	-	-	-	-	-	397	4,229	4,600	3	23	35	22
WEST NORTH CENTRAL	27	343	7	1	8	-	2	909	15,705	16,696	4	180	172	221
Minnesota*	4	62	-	1	2	-	-	93	2,798	2,995	2	81	52	75
Iowa	1	41	-	-	2	-	-	165	1,863	2,016	-	17	17	49
Missouri*	19	149	6	-	2	-	1	530	6,361	7,112	1	45	63	27
North Dakota	1	16	-	-	-	-	-	14	331	295	-	2	2	35
South Dakota*	-	32	-	-	-	-	-	13	589	435	-	1	1	25
Nebraska	1	5	-	-	-	-	-	19	1,177	1,385	1	5	17	1
Kansas*	1	38	1	-	2	-	1	75	2,586	2,458	-	29	20	9
SOUTH ATLANTIC	132	2,149	2	3	15	3	15	3,976	76,554	77,037	75	1,877	2,115	90
Delaware	5	17	-	-	-	-	-	27	1,124	945	-	3	13	1
Maryland	25	375	2	-	1	-	-	455	10,118	9,909	5	144	135	-
District of Columbia	2	109	-	1	-	-	1	285	5,097	5,342	7	152	239	-
Virginia	21	244	-	1	4	3	7	446	7,061	8,082	10	172	208	1
West Virginia	NA	79	-	NA	1	NA	-	NA	1,122	1,093	NA	5	1	-
North Carolina	13	341	-	1	1	-	2	584	10,875	11,316	12	166	308	2
South Carolina	11	174	-	-	-	-	2	402	7,177	7,152	5	87	96	8
Georgia	11	262	-	-	2	-	3	789	14,427	14,440	24	463	384	68
Florida*	44	548	-	-	5	-	-	988	19,553	18,758	12	685	731	10
EAST SOUTH CENTRAL	47	944	4	-	1	3	5	1,577	27,274	28,492	48	368	241	55
Kentucky	10	209	1	-	1	1	1	181	3,053	3,852	2	40	26	34
Tennessee	19	302	3	-	-	2	4	649	10,120	11,681	41	160	73	10
Alabama	7	217	-	-	-	-	-	469	8,093	7,729	2	46	47	11
Mississippi	11	216	-	-	-	-	-	278	6,008	5,230	3	122	95	-
WEST SOUTH CENTRAL	100	1,129	8	1	12	5	8	2,837	44,327	40,767	43	1,070	940	317
Arkansas	13	120	7	-	-	1	2	432	3,489	3,005	-	35	25	47
Louisiana	17	217	1	1	1	-	-	498	7,424	5,878	3	209	209	5
Oklahoma*	10	125	-	-	-	2	2	254	3,989	3,811	-	36	28	79
Texas	60	667	-	-	11	2	4	1,653	29,425	28,073	40	790	678	186
MOUNTAIN	7	277	2	-	9	-	-	634	11,787	13,058	3	142	143	10
Montana	1	22	-	-	-	-	-	40	736	667	-	6	-	2
Idaho	-	10	2	-	5	-	-	21	409	637	-	1	3	-
Wyoming	-	4	-	-	-	-	-	16	276	345	-	3	2	-
Colorado	2	16	-	-	2	-	-	230	3,260	3,355	-	44	44	-
New Mexico	2	55	-	-	-	-	-	72	1,637	1,925	-	42	30	5
Arizona*	1	133	-	-	-	-	-	163	2,994	3,695	-	28	54	3
Utah*	1	12	-	-	1	-	-	33	704	746	-	4	4	-
Nevada*	-	25	-	-	1	-	-	59	1,771	1,688	3	14	6	-
PACIFIC	106	1,587	1	2	45	-	1	2,866	52,944	53,077	79	1,555	1,554	157
Washington*	NA	56	-	-	3	-	-	242	3,885	4,001	NA	49	68	-
Oregon	5	67	-	-	1	-	-	185	3,707	3,855	4	53	51	1
California	82	1,226	1	2	40	-	1	2,305	42,582	42,318	75	1,432	1,408	154
Alaska	-	16	-	-	-	-	-	85	1,711	1,764	-	5	11	2
Hawaii	19	222	-	-	1	-	-	49	1,059	1,139	-	16	16	-
Guam*	NA	24	-	NA	-	NA	-	NA	49	93	NA	-	1	-
Puerto Rico	7	143	-	-	-	-	-	38	909	1,019	9	151	210	8
Virgin Islands	-	2	-	-	2	-	-	5	69	50	1	6	3	-

NA: Not available

*Delayed reports received for 1977 are not shown below but are used to update last year's weekly and cumulative totals.

†The following delayed reports will be reflected in next week's cumulative totals. TB: Mo. -1, Kans. -1, Fla. -7, Guam +2; Typhoid fever: Minn. +2; RMSF: Mo. +2; GC: N.H. +2 mil., Ill. -1 civ. +1 mil., Okla. +17 mil., Utah -2 civ., Wash. +81 mil., Guam +10 civ.; Syphilis: Nev. +1 civ., Wash. +27 civ +10 mil.; An. rabies: S.Dak. +12, Ariz. +4

Table IV
Deaths in 121 United States Cities*
Week Ending May 6, 1978 - 18th Week

REPORTING AREA	ALL CAUSES					Pneumonia and Influenza ALL AGES	REPORTING AREA	ALL CAUSES					Pneumonia and Influenza ALL AGES
	ALL AGES	65 Years and Over	45-64 Years	25-44 Years	Under 1 Year			ALL AGES	65 Years and Over	45-64 Years	25-44 Years	Under 1 Year	
NEW ENGLAND	658	426	161	33	22	33	SOUTH ATLANTIC	1,314	715	360	127	57	52
Boston, Mass.	162	92	42	12	10	8	Atlanta, Ga.	120	59	41	10	3	2
Bridgeport, Conn.	52	33	12	3	2	4	Baltimore, Md.	228	133	66	15	7	7
Cambridge, Mass.	20	13	6	1	-	2	Charlotte, N. C.	41	23	8	3	5	2
Fall River, Mass.	35	25	10	-	-	2	Jacksonville, Fla.	92	54	28	4	4	3
Hartford, Conn.	49	32	13	2	1	1	Miami, Fla.	110	64	35	7	3	1
Lowell, Mass.	26	21	4	1	-	3	Norfolk, Va.	48	32	11	-	4	5
Lynn, Mass.	20	14	6	-	-	1	Richmond, Va.	58	32	18	4	3	3
New Bedford, Mass.	26	20	4	1	-	1	Savannah, Ga.	42	18	14	5	4	3
New Haven, Conn.	57	38	13	4	2	-	St. Petersburg, Fla.	95	85	8	1	1	8
Providence, R.I.	78	43	24	7	3	6	Tampa, Fla.	67	40	17	6	2	6
Somerville, Mass.	6	3	3	-	-	-	Washington, D. C.	364	145	98	71	20	11
Springfield, Mass.	45	31	13	-	-	1	Wilmington, Del.	49	30	16	1	1	1
Waterbury, Conn.	24	20	2	-	1	2							
Worcester, Mass.	58	41	9	2	3	2							
MIDDLE ATLANTIC	2,594	1,629	640	180	73	124	EAST SOUTH CENTRAL	600	360	168	33	16	29
Albany, N. Y.	47	32	10	1	2	3	Birmingham, Ala.	117	66	34	9	3	4
Allentown, Pa.	20	10	10	-	-	-	Chattanooga, Tenn.	46	28	11	2	2	4
Buffalo, N. Y.	106	68	27	6	3	10	Knoxville, Tenn.	31	21	7	2	-	1
Camden, N. J.	34	23	7	2	-	1	Louisville, Ky.	101	55	30	6	5	6
Elizabeth, N. J.	24	16	5	2	-	2	Memphis, Tenn.	145	85	45	8	1	2
Erie, Pa.	27	18	7	1	1	1	Mobile, Ala.	41	24	12	1	3	2
Jersey City, N. J.	50	30	14	3	3	-	Montgomery, Ala.	48	31	15	2	-	4
Newark, N. J.	52	22	14	9	5	9	Nashville, Tenn.	71	50	14	3	2	6
New York City, N. Y.	1,358	865	330	102	28	57	WEST SOUTH CENTRAL	1,073	595	279	81	59	37
Paterson, N. J.	38	24	8	4	1	2	Austin, Tex.	33	18	8	2	-	1
Philadelphia, Pa.	400	227	109	29	17	16	Baton Rouge, La.	33	17	8	3	3	1
Pittsburgh, Pa.	70	45	20	1	3	4	Corpus Christi, Tex.	33	15	12	-	1	-
Reading, Pa.	42	31	8	2	-	2	Dallas, Tex.	152	90	32	14	7	7
Rochester, N. Y.	117	69	30	8	7	11	El Paso, Tex.	51	27	13	5	3	4
Schenectady, N. Y.	30	19	8	2	-	-	Fort Worth, Tex.	96	52	22	9	8	4
Scranton, Pa.	27	24	2	1	-	1	Houston, Tex.	256	118	88	18	16	5
Syracuse, N. Y.	66	45	14	1	3	2	Little Rock, Ark.	45	30	10	2	3	-
Trenton, N. J.	25	16	7	1	-	1	New Orleans, La.	105	55	30	9	7	1
Utica, N. Y.	32	26	6	-	-	2	San Antonio, Tex.	145	89	32	10	6	4
Yonkers, N. Y.	29	19	4	5	-	-	Shreveport, La.	40	28	7	2	2	2
							Tulsa, Okla.	84	56	17	7	3	8
EAST NORTH CENTRAL	2,146	1,322	548	132	73	70	MOUNTAIN	539	318	127	42	25	16
Akron, Ohio	46	28	10	5	2	-	Albuquerque, N. Mex.	61	30	15	10	3	7
Canton, Ohio	41	27	9	4	-	1	Colorado Springs, Colo.	27	17	5	4	-	2
Chicago, Ill.	538	311	143	47	11	17	Denver, Colo.	117	73	27	6	7	2
Cincinnati, Ohio	170	103	49	7	7	4	Las Vegas, Nev.	26	13	8	2	-	-
Cleveland, Ohio	164	90	50	14	6	6	Ogden, Utah	26	17	6	-	3	2
Columbus, Ohio	87	53	20	5	4	9	Phoenix, Ariz.	114	58	33	7	4	1
Dayton, Ohio	85	53	19	6	4	-	Pueblo, Colo.	27	20	4	1	1	2
Detroit, Mich.	252	155	67	18	9	8	Salt Lake City, Utah	58	37	13	3	4	-
Evansville, Ind.	34	25	7	-	-	3	Tucson, Ariz.	83	53	16	9	3	-
Fort Wayne, Ind.	52	30	11	1	8	1							
Gary, Ind.	20	10	4	1	1	1	PACIFIC	1,555	959	362	106	63	47
Grand Rapids, Mich.	55	37	14	2	-	4	Berkeley, Calif.	13	9	2	1	1	-
Indianapolis, Ind.	146	89	38	8	7	2	Fresno, Calif.	57	37	12	2	3	2
Madison, Wis.	26	14	9	-	2	2	Glendale, Calif.	32	23	7	1	-	-
Milwaukee, Wis.	138	102	27	3	3	4	Honolulu, Hawaii	60	35	14	8	3	-
Peoria, Ill.	46	27	13	2	1	4	Long Beach, Calif.	88	41	35	8	3	3
Rockford, Ill.	41	27	5	4	3	-	Los Angeles, Calif.	520	323	112	38	16	20
South Bend, Ind.	50	33	15	1	-	4	Oakland, Calif.	40	18	11	6	4	-
Toledo, Ohio	99	68	24	3	4	-	Pasadena, Calif.	23	17	5	1	-	-
Youngstown, Ohio	56	40	14	1	1	-	Portland, Oreg.	127	81	33	4	4	1
							Sacramento, Calif.	49	29	11	2	4	4
WEST NORTH CENTRAL	805	492	188	46	50	22	San Diego, Calif.	121	74	22	8	5	1
Des Moines, Iowa	65	40	19	-	3	-	San Francisco, Calif.	156	104	30	11	7	3
Duluth, Minn.	20	16	3	-	1	2	San Jose, Calif.	61	35	18	4	2	3
Kansas City, Kans.	48	23	9	8	3	-	Seattle, Wash.	127	84	31	8	4	5
Kansas City, Mo.	131	71	41	7	8	-	Spokane, Wash.	44	26	10	2	5	5
Lincoln, Nebr.	30	23	5	-	1	2	Tacoma, Wash.	37	23	9	2	2	-
Minneapolis, Minn.	95	59	23	4	4	3							
Omaha, Nebr.	82	52	22	4	4	1							
St. Louis, Mo.	178	108	30	16	16	5							
St. Paul, Minn.	93	61	20	3	7	-							
Wichita, Kans.	63	39	16	4	3	9							
TOTAL	11,284	6,816	2,833	780	438	430	Expected Number	11,058	6,749	2,856	680	412	404

*By place of occurrence and week of filing certificate. Excludes fetal deaths.

The Morbidity and Mortality Weekly Report, circulation 78,000, is published by the Center for Disease Control, Atlanta, Georgia. The data in this report are provisional, based on weekly telegraphs to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.

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Epidemiologic Notes and Reports**Imported Tick-borne Encephalitis – Ohio**

On July 15, 1977, a 4-year-old girl from Cleveland was noted to have a swollen right hand and pale appearance and to refuse solid foods. By July 17, she complained of headache and had a temperature of 38 C (100 F). Between July 19-21 she had 4 episodes of vomiting fluids and periods of increased irritability alternating with lethargy. When she was admitted to a hospital in Cleveland on July 21, she was ataxic and complained of neck pain. Her vital signs on admission were temperature, 38 C (100 F); blood pressure, 104/56; pulse, 120, and respiration, 30. Other than an elevated leukocyte level and slightly depressed hemoglobin level, laboratory results were within normal ranges. However, 381 leukocytes were found in cerebrospinal fluid, and there was a total absence of normal waking rhythms by EEG.

Three serum samples, collected July 22, July 26, and August 12, were sent to CDC for determination of antibody to arboviruses. Hemagglutination inhibition (HI) tests were performed with a battery of antigens including those of St. Louis encephalitis, yellow fever, Powassan (POW), Langat (LGT) and California encephalitis subtype LaCrosse (LAC) viruses. The results revealed antibody to all 4 flaviviruses but not to LAC virus (Table 1). Serologic conversion to LGT and stable titers to the other flaviviruses suggested a recent infection with a member of the tick-borne encephalitis (TBE) complex of that group. CF test results con-

TABLE 1. Results of hemagglutination-inhibition (HI) and complement-fixation (CF) tests with serum from a 4-year-old girl, Ohio, July-August, 1977

Serum No.	Date	Test	Antibody titer* to antigen shown				
			St. Louis encephalitis	Powassan virus	Langat virus	Yellow fever	LaCrosse virus
1	7-22-77	HI	20	—**	20	20	—
		CF	—	—	32	—	—
2	7-26-77	HI	20	—	20	20	—
		CF	—	—	32	—	—
3	8-12-77	HI	40	10	80	20	—
		CF	—	16	256	—	—

* Given as reciprocals

** Blank signifies <10 (HI) or <8 (CF)

firmed this, demonstrating an 8-fold rise to LGT and detection of antibody to POW. Because of the potential hazards to laboratory workers inherent in further testing with flaviviruses of the TBE complex, neutralization tests were not performed.

Patient history revealed that the child recently had visited her native Hungary with her adoptive parents. On June 22, she had hiked in an open area near the city of Natori, about 25 kilometers from the Bakony Forest. The latter is an enzootic focus of TBE virus approximately 100 kilometers southwest of Budapest. Three days later she had a temperature of 39 C (102 F), and a tick of undetermined species and gender was removed from her scalp. She was started on a course of antibiotics. Within 5 days after this treatment began, the fever resolved. Afterward, however, she became more hostile, negativistic, and irritable. She returned to Cleveland, and no additional problems were noted until July 15. Follow-up EEG readings, performed at approximately 1-month intervals, indicated improved but continued aberrant rhythms simultaneous with a return to good physical health and psychosocial normality.

Reported by SM Bannister, MD, RP Cruse, DO, AD Rothner, MD, Cleveland Clinic, Cleveland; T Halpin, MD, State Epidemiologist, Ohio Dept of Health; Arbovirus Reference Br, Vector-borne Diseases Div, Bur of Laboratories, CDC.

Editorial Note: Of the 58 known flaviviruses, 15 are considered to be principally tick-borne, and a number have been isolated in eastern Europe, including Hungary. In such areas TBE is considered an important, if not wide-spread, problem. TBE virus in east central Europe is mainly transmitted by ixodid ticks, often of the species *Ixodes ricinus*. The remission and recurrence of symptoms and the serologic responses described in this case are characteristic of biphasic meningoencephalitis caused by the tick-borne viral encephalitides.

These findings emphasize the need for a complete case history, including recent travel and insect exposure, in this day of rapid and direct long-distance travel.

***Clostridium perfringens* Food Poisoning – California**

An outbreak of *Clostridium perfringens* food poisoning in Ojai, California, traced to the consumption of bean-filled burritos,* illustrates that foods other than meat, poultry, or gravy contain the essential amino acids to support growth of this organism.

The burritos were one of many Mexican-style foods offered for sale at an outdoor fund-raising event on September 18, 1977, in Ojai. On September 19, the Ventura County Environmental Health Division began receiving

reports of illness and initiated an investigation. To identify cases, hospital and community doctors, school nurses, and the event-organizers were contacted, and press releases were distributed to the local media. By these means, 181 ill persons who had attended the event were identified. Information from 40 other persons who ate at the event but did not become ill was also obtained. It is not known how many persons consumed burritos at this event, although sales receipts showed that about 1,200 had been sold.

Symptoms consisted primarily of diarrhea (96.2%) and cramps (79.7%). Only 3 (1.7%) of those ill reported vomit-

*burrito: a flour tortilla filled with either meat or beans and generally garnished with hot sauce and cheese

C. perfringens — Continued

ing. The mean incubation period was 11 hours, with 87% reporting illness from 8-22 hours after eating. The majority of ill persons were free of symptoms within 24 hours of onset. No one was hospitalized. Analysis of food histories incriminated the bean-filled burritos ($p < .01$).

Containers of leftover bean-burrito filling, green chili sauce, taco sauce, and shredded longhorn cheese refrigerated at 5 C (40 F) were sampled by county investigators 3 hours after closing of the food stand. Samples of 1 frozen burrito, another held at room temperature, and a frozen enchilada were also obtained. All of the food samples were examined for the presence of *Salmonella*, *Shigella*, *Staphylococcus*, and *C. perfringens* and for total aerobic colony counts. The bean-burrito filling and the unrefrigerated whole burrito were found to contain 4.0×10^6 and 7.1×10^6 *C. perfringens* bacteria per gram, respectively. None of the other food specimens contained more than 30,000 *C. perfringens* organisms per gram. No *Shigella*, *Salmonella*, or staphylococcal organisms were found in food specimens.

The bean-burrito filling contained no meat or meat extracts. It was prepared from dried pinto beans that had been boiled with water in metal pots, mashed, and stored in

cafeteria refrigerators overnight. The pots of beans were kept refrigerated while they were being transported the following morning. They were transferred to smaller open containers and reheated for an undetermined period of time before being served in the burritos. Several persons throughout the day reported that the beans were not heated and the burritos were served at ambient temperature. During that day, shade temperatures reached 29.4 C (85 F). There was no evidence of cross contamination with meat products.

Reported by S Matson, BS, County of Ventura Health Dept, Ventura; EH Rau, RS, County of Ventura Environmental Resource Agency; J Chin, MD, State Epidemiologist, California Dept of Health; Bur of Training, Enteric Diseases Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial note: Pinto beans and other legumes provide an excellent substrate for *C. perfringens* (1). If beans are not served immediately after cooking, they should be held at ≥ 60 C (140 F) or rapidly cooled in shallow containers in refrigerators and reheated to 74 C (165 F) before being served.

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Acute Arsenic Poisoning — Georgia

On February 6, 1978, 2 maintenance workers employed by a chemical firm in Atlanta, Georgia, became ill several hours after cleaning a clogged drain at the company. Both were hospitalized with symptoms of gastrointestinal distress, headaches, malaise, and hematuria and were found to have acute fulminant hemolytic anemia. Within 24 hours of admission, the patients' hemoglobins had dropped by 4 gm%; they developed acute renal failure and were treated with multiple-exchange transfusions and hemodialysis. One of the patients recovered; the other has remained in chronic renal failure. Blood and urine samples from both patients were sent to CDC for toxicologic analysis.

Arsenic was found in the urine of the 2 affected workers (.97 parts per million [ppm] and .85 ppm) and serum (.18 and .20 ppm) and in smaller quantities in samples from 2 other workers who had been in the room at the time of the cleaning operation but had no symptoms.

The chemical company blends, packages, and sells commercial cleaning products. When the firm was visited 2 days after the incident, the drain was still clogged with a dark bubbling liquid that gave off a pungent gas. The men had first flushed this drain with 2,000 gallons of water that had been stored in an abandoned tank used 5 years previously for holding arsenic herbicides. They had then poured 10 pounds of a commercial drain cleaner containing sodium hydroxide, sodium nitrate, and aluminum chips into the drain. The sodium hydroxide reacted with the aluminum to give off free hydrogen, which in turn combined with arsenic residue in either the water or the drain sludge to produce arsine (AsH_3), a highly toxic gas known to cause acute hemolytic anemia (1, 2). Samples taken from the drain revealed high levels of arsenic in the liquid (410-970 ppm), in the residue (4,460 ppm), and in water from the storage tank (11,400 ppm).

The drain was eventually cleared by a man wearing full protective clothing with self-contained breathing apparatus; the contents were disposed of as a toxic substance.

Reported by RV Rosvoll, MD, JS Wilson, MD, Crawford Long Hospital, Atlanta; PH Liebman, MD, Clayton General Hospital, Riverdale; RC McFarland, Georgia Institute of Technology; R Davault, Occupational Health and Air Pollution Control Center, Fulton County Health Dept; G Parrish, University of California at Los Angeles; Div of Preventive Health Services, Region IV, NIOSH, Toxicology Br, Clinical Chemistry Div, Bur of Laboratories, and Special Studies Br, Chronic Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Arsenic is an important occupational hazard in smelting, metal refining, soldering, and many other diverse industrial processes. This poisonous compound fixes to hemoglobin within circulating red blood cells to cause fulminant intravascular hemolysis. Acute renal failure results from both the massive hemoglobinuria and the direct toxicity of arsine on renal tubule cells. In the past arsenic poisoning was almost uniformly fatal; exchange transfusions and dialysis have now decreased the case-fatality ratio.

This is the first episode of arsenic poisoning associated with the use of a commercial drain cleaner reacting on an arsenic residue. While this hazard may not be common, persons such as maintenance workers in the chemical industry should be warned through product labeling not to use cleaning compounds in the presence of arsenic.

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Current Trends

Results of Screening for Gonorrhea — United States 12-Month Period Ending December 31, 1977

In the 12-month period ending December 31, 1977, a total of 8,456,410 cervical-swab specimens were taken from women as part of gonorrhea screening programs; 393,305 (4.7%) were found to be positive. Table 2 reflects the results of such screening by types of health-care facilities securing the specimen. Although the positivity rates were highest (18.4%) in venereal disease clinics, 89% of all tests were performed in other settings. In these settings culture-positivity rates in women ranged from 1.6% among private family-planning groups to 5.4% for women in man-

power training agencies. Among 1,880,855 women tested by private physicians, cultures from 37,943 (2.0%) were positive.

Provisional data indicate that an additional 2,025,955 women were tested at all types of facilities from January 1-March 31, 1978, or approximately 675,000 per month. For this period, the overall positivity rate of cultures from all sources was 4.5%.

Reported by Venereal Disease Control Div, Bur of State Services, CDC.

TABLE 2. Results of gonorrhea culture tests on females — United States*, January 1977-December 1977

REPORTING SOURCE	NUMBER TESTED	NUMBER POSITIVE	PERCENT POSITIVE	REPORTING SOURCE	NUMBER TESTED	NUMBER POSITIVE	PERCENT POSITIVE
Health Care Providers (Excluding VD Clinics)	7,501,076	217,212	2.9	Health Care Providers (Excluding VD Clinics—Con't.)			
Health Department Non-VD Clinic	1,815,976	59,254	3.3	Private Physicians	1,880,855	37,943	2.0
Family Planning	1,280,159	40,802	3.2	Private Family Planning Groups	1,032,220	16,966	1.6
Prenatal, Ob-Gyn	184,904	5,582	3.0	Group Health Clinics	152,942	3,392	2.2
Cancer Detection	22,268	396	1.8	Student Health Centers	206,377	3,496	1.7
Combinations or Other	328,645	12,474	3.8	Manpower Training Agencies	13,930	756	5.4
Public/Private Hospital—Outpatient	1,365,615	61,013	4.5	Industrial Screening	3,432	75	2.2
Family Planning	247,957	8,153	3.3	Military/Dependents	76,710	2,164	2.8
Prenatal, Ob-Gyn	323,954	10,445	3.2	Correctional or Detention Centers	64,230	3,354	5.2
Cancer Detection	18,334	540	2.9	Not Specified	124,038	6,623	5.3
Combinations or Other	775,370	41,875	5.4	Venereal Disease Clinics	955,334	176,093	18.4
Public/Private Hospital—Inpatient	57,792	1,400	2.4	TOTAL (All Clinics)	8,456,410	393,305	4.7
Obstetric	2,803	51	1.8				
Gynecologic	812	27	3.3				
Combinations or Other	54,177	1,322	2.4				
Community Health Centers	706,968	20,776	2.9				
Family Planning	195,498	3,910	2.0				
Prenatal, Ob-Gyn	56,595	1,475	2.6				
Cancer Detection	7,275	45	0.6				
Combinations or Other	447,600	15,346	3.4				

*Excludes Trust Territories

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ATLANTA, GEORGIA 30333**

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